Math 468 Potpourri (Spring 2015)

(HBH 453. MWF 10:00-10:50am)

Topics in Analysis and Combinatorics.

Course Description. We present some self contained results in combinatorics, analysis and elementary number theory. Those include elementary Ramsey Theory and Recurrence Phenomenon (in combinatorics, number theory and dynamical systems), various notions of "largeness" in analysis, the notions of density and uniform distribution in various settings.

Prerequisites. Basic background in linear and abstract algebra, some topology (of metric spaces would suffice) and some measure theory.

Grading. Grades will be based upon attendance and class participation. (Challenge problems will be distributed from time to time, and solutions will be discussed in class).

Absences. Attendance will be an important part of the final grade.

Examinations. No examinations. Students may be asked to prepare presentations in class.

Textbook. There will be no assigned textbook in this course. Notes will be distributed from time to time. Some of the material is covered in the books:

(1) M. Aigner, G. M. Ziegler, **Proof from the Book**, 4th edition, Springer 2010,
(2) Graham, Knuth and Patashnik, **Concrete Mathematics**, 2nd edition, Addison-Wesley,
(3) Randall McCutcheon, **Elementary Methods in Ergodic Ramsey Theory**, Lecture Notes in Mathematics 1722, Springer.

Instructor. Michael Boshernitzan, HB 442, michael@rice.edu, 713-348-5209. Office hours will be announced.

Any student with a disability that requires accomodation is encouraged to contact the instructor and Disability Support Sevices in the Allen Center.

The information contained in this syllabus, other than the absence policy, may be subject to change with reasonable advance notice, as deemed appropriate by the instructor.